



## MIG for "Induced Lightning Tests" on Aircraft Electronic Systems



### Single Stroke "SS"

Waveform:  
6,4/70  $\mu$ s v or i  
40/120  $\mu$ s v or i  
50/500  $\mu$ s v or i  
Range:  
v: 125 V up to 1600 V  
i: 125 A up to 1600A  
Standard: DO-160D (E)

**MIG0600SS**



### Multiple Stroke "MS"

Waveform: as "SS"  
First peak A1 75 V up to 1'600 V  
Following peaks A2 50 V up to 400 V  
Standard:  
DO-160D (E)

**MIG0600MS**



### Multiple Burst "MB"



Waveform: 1, 10 MHz, 0.1/64 v or i,  
20 bursts with 24 pulses  
Range:  
150 V up to 3200 V  
Standard:  
DO-160D (E)

**MIG-OS-MB**

## MIG for Lighting Tests on Telecom Equipment

### MIG0603BEL



### Technical Data

**Waveforms: 10/1000  $\mu$ s and 10/360  $\mu$ s v and i on two outputs:**  
Range v: 100 up to 1200 V  
Range i: 10 up to 120 A  
**Waveform: 10/360  $\mu$ s v and i on 24 outputs (12 pairs):**  
Range v: 100 up to 1200 V  
Range i: 3 up to 30 A  
**Waveforms: CWG 1.2/50, 8/20  $\mu$ s**  
Range v: 500 up to 6000 V  
Range i: 250 up to 3000 A  
CDN: single phase 16 A, 250 V  
Dimensions: 450 x 570 x 570 mm  
Weight: 80 kg

### Bellcore GR-1089-CORE

**Chapter: 4.5.7 Telecom Ports**  
**Table: 4.2 10/1000  $\mu$ s, 10/360  $\mu$ s**  
First level lightning  
2/10  $\mu$ s note CWG+3 Ohm  
10/360  $\mu$ s 12 pairs  
**Table: 4-3 2/10  $\mu$ s**  
Second level lightning  
2/10  $\mu$ s note CWG+8 Ohm  
**Table: 4-4 2/10  $\mu$ s**  
Intrabuilding  
2/10  $\mu$ s note CWG+6 Ohm  
**Table: 4-5 and 4-6 1.2/50, 8/20  $\mu$ s**  
AC power ports  
6000 V, 3000 A

### MIG0624BEL



### Technical Data

**Waveform: current 8/20  $\mu$ s**  
Application: Coaxial Cable Ports Tests on "Outside Plant"  
Standards: Bellcore GR-1089-CORE  
Range v: 500 up to 6000 V  
Range i: 250 up to 24'000 A  
EUT  
Connection: Cable 1m with test adaptor  
Control: 4 UH 19" can be controlled remotely RS232 up to 23 memory places  
Dimensions: 450 x 570 x 380 mm  
Weight: 54 kg

### Bellcore GR-1089-CORE

**Chapter: 4.6 .5 Equipment**  
intended for the Outside Plant  
**R4-45: waveform 8/20  $\mu$ s**  
20 kA  
**On demand MIG0615BEL tester:**  
**Chapter: 4.6 Coaxial Cable Ports**  
**Table: 4.9 waveform 10/250  $\mu$ s**  
**Table: 4-11 waveform 10/250  $\mu$ s**  
4000 V, 2000 A  
**Table: 4-13 waveform 10/250  $\mu$ s**  
2000 V, 1000 A  
**Table: 4-15 waveform 10/250  $\mu$ s**  
4000 V, 2000 A

## ITU-T K.44 Testers



10/700  $\mu$ s up to 6 kV

Waveforms: 10/700  $\mu$ s  
Options: Ring or CWG  
Range: 0.25 kV to 6.0 kV  
Coupling: for single-phase included  
Application: telecommunication  
Standards: IEC 61000-4-5,  
ITU-T K.44

**MIG0603IN**



CWG 1.2/50, 8/20  $\mu$ s up to 12 kV/6 kA

Waveforms: 1.2/50, 8/20  $\mu$ s  
Range v: 0.5 kV up to 12.0 kV  
Range i: 0.25 kA up to 6 kA  
Coupling: MIG-CDN12-32  
Standards: IEC 61000-4-5,  
ITU-T K.44

**MIG1206 and CDN-MIG12-32**



CDN-KIT1000T  
Surge coupling I/O lines



CDN2000A-06-32  
Surge, EFT,  
3-phase line coupling

**Accessories**

## FCC P68 Tester



### Five Surge Pulses

Waveforms: 10/700, 10/160, 10/560, 2/10 and 1.2/50-8/20  $\mu$ s  
 Range: depending on waveforms  
 Coupling: for single-phase included  
 Standards: IEC 61000-4-5, FCC part 68 subpart D (2000)

**MIG0603FCC**

## IEC 60950 Tester



### Three Surge Pulses

Waveforms: 1,2/50  $\mu$ s, 8/20  $\mu$ s CWG, 10/700  $\mu$ s, 1.2/50 C = 1  $\mu$ F  
 Ranges: voltage up to 6 kV  
 Coupling: single-phase CWG and 1.2/50  $\mu$ s  
 Standards: ITU-T K.44, EN 60950, IEC 60950

**MIG0603EN**

## ITU-T K.12 Tester



### One and Two Electrode Gas Arrestor Tester

Waveforms i: 8/20  $\mu$ s up to 12 kA, 10/1000  $\mu$ s up to 200 A, 10/350  $\mu$ s up to 5 kA  
 Standard: ITU-T K.12

**MIG0603TK12**

## Military Tester MIG2000-6



Mainframe: for different plug-ins  
 Range: voltage max. 6 kV  
 Standards: e.g. MIL 451E plus customised applications

**MIG2000-6**



### Plug-ins MIL-461E CS116, -115

Standard: MIL-STD-461E CS116  
 Plug-ins: CS116-10k10M, CS116-30M100M damped osc.  
 Standard: MIL-STD-461E CS115  
 Plug-in: 30 ns rectangular pulse  
 Waveform: in accordance with MIL-STD-461E

**MIL-STD-461E plug-ins**



### Accessories: coupler, test fixture

Coupler: CN-MIG-BT for CS116 frequency range up to 10 MHz, CN-MIG-BT2 for CS115 and CS116 frequency range 10 MHz to 100 MHz  
 Test fixture: part of the mainframe

**Accessory**

## Customised Plug-Ins



### e.g. aircraft testing

Standard: DO160 single pulse  
 Waveforms: 2.5 MHz and 5 MHz  
 Standard: ABD0013  
 Waveforms: 40/95  $\mu$ s, 5 MHz 12 Ohm

Other applications on demand

**Customised Plug-ins**

## MIG1212EMP and DN-MIG1212



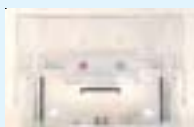
### Combination Wave Generator:

Voltage 10kV 0.5/250 $\mu$ s common mode, 10kV 0.5/50  $\mu$ s differential mode, current 1 kA 0.5/250  $\mu$ s common mode, 1 kA 0.5/50  $\mu$ s differential mode, plus coupling network for three phase coupling onto 400 V common and differential mode

De-coupling filter for 50 Hz, 1phase 230V 3 kVA and 3 phase up to 400 V 10 kVA.. Damping in accordance with IEC 61000-4-5

**MIG1212EMP and DN-MIG1212**

## Accessories to Modular Impulse Generators (MIG)



### Test Cabinet

Dimensions: 500 x 450 x 270 mm  
 DUT volume: 200 x 200 x 200 mm  
 Safety: VDE0104 warning lamps green, red  
 Application: for all MIG with high voltage terminal on top

**TC-MIG24**



**Software TEMA**

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